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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/033,825	12/19/2001	Milton Lee Buschbom	TI-31857	8453

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EXAMINER

VU, QUANG D

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 01/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,825

Applicant(s)

BUSCHBOM, MILTON LEE

Examiner

Quang D Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-21, drawn to a substrate for an unpackaged integrated circuit chip, classified in class 257, subclass 778.
 - II. Claims 22-28, drawn to a method of manufacturing a substrate for an unpackaged integrated circuit chip, classified in class 438, subclass 108.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the device of group I invention could be made by as a materially different process. For example, the conductive material can be selectively to form a plurality of contacts arranged to correspond to the integrated circuit instead of patterning the conductive material to form a plurality of contacts arranged in a pattern corresponding to the integrated circuit.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jacki Garner on 08/23/02 a provisional election was made without traverse to prosecute the invention of group I, claims 1-21. Affirmation of this

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election must be made by applicant in replying to this Office action. Claims 22-28 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 6-15 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,150,193 to Glenn.

Regarding claim 1, Glenn (figures 5, 6) teaches a substrate for an unpackaged integrated circuit chip having surface mount contacts disposed thereon in a pattern, comprising:

an insulating material (12); and

a conductive material (22) disposed over the insulating material, the conductive material comprising a plurality of contacts arranged in a pattern corresponding to the integrated circuit (30) contact pattern, the conductive material comprising a conductive ring disposed around the periphery of the contact pattern, wherein the substrate contacts are coupleable to the integrated circuit chip surface mount contacts.

Regarding claim 2, Glenn teaches the conductive material (22) comprises at least one conductive trace disposed proximate at least one contact.

Regarding claim 3, Glenn teaches at least one conductive trace (22) is coupled to the conductive material ring (202).

Regarding claim 4, Glenn teaches the substrate contacts comprise wire bond pads (38), wherein the wire bond pads (38) are coupleable to the integrated circuit chip (30) surface mount contacts.

Regarding claim 6, Glenn teaches the insulating material (12) includes a plurality of apertures disposed in the integrated circuit contact pattern.

Regarding claim 7, Glenn teaches the conductive material (22) comprises Cu (column 4, lines 31-32).

Regarding claim 8, Glenn teaches the conductive material is formed by electro-less plating (column 4, lines 46-50).

Regarding claim 9, Glenn (figures 5-6) teaches a package for an integrated circuit chip having surface mount contacts disposed thereon in a pattern, comprising:

a substrate (12) including an insulating material and a conductive material disposed over the insulating material, the conductive material comprising a plurality of contacts arranged in a pattern corresponding to the integrated circuit contact pattern, the conductive material comprising a conductive ring disposed around the periphery of the contact pattern, wherein the substrate contacts are coupleable to the integrated circuit chip surface mount contacts.

Regarding claim 10, Glenn teaches the conductive material (22) comprises at least one conductive trace disposed proximate at least one contact.

Regarding claim 11, Glenn teaches at least one conductive trace (22) is coupled to the conductive material ring (202).

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Regarding claim 12, Glenn teaches the substrate contacts comprise wire bond pads (38), wherein the wire bond pads (38) are coupleable to the integrated circuit chip (30) surface mount contacts.

Regarding claim 13, Glenn teaches an encapsulating insulating material (208) disposed over the integrated circuit (30) and substrate (12).

Regarding claim 14, Glenn teaches a shielding material (210) disposed over the encapsulating insulating material (208), the shielding material (210) being electrically coupled to the conductive material solid ring (202).

Regarding claim 15, Glenn teaches the shielding material (210) comprises an electrically conductive material (column 7, lines 14-15).

Regarding claim 18, Glenn teaches the insulating material (12) includes a plurality of apertures disposed in the integrated circuit contact pattern.

Regarding claim 19, Glenn teaches the conductive material is formed by electro-less plating (column 4, lines 46-50).

Regarding claim 20, Glenn teaches the integrated circuit comprises a flip-chip.

Regarding claim 21, Glenn teaches an integrated circuit packaged in the package.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,150,193 to Glenn in view of US Patent No. 6,075,710 to Lau.

Regarding claim 5, Glenn differs from the claimed invention by not showing the insulating material comprises polyimide. However, Lau teaches the substrate comprises polyimide (210) (figure 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Lau into the device taught by Glenn, since the polyimide is a resin material for adhesion.

Regarding claim 16, Glenn differs from the claimed invention by not showing the shielding material comprises a dissipative material having less than about 1 M ampere resistance. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the shielding material comprises a dissipative material having less than about 1 M ampere resistance, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 17, Glenn teaches the conductive material (22) comprises Cu (column 4, lines 31-32). Glenn differs from the claimed invention by not showing the insulating material comprises polyimide. However, Lau teaches the substrate comprises polyimide (210) (figure 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Lau into the device taught by Glenn, since the polyimide is a resin material for adhesion.

Conclusion

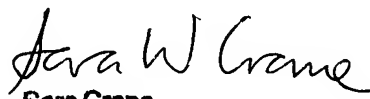
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

qv
January 6, 2003


Sara Crane
Primary Examiner